

ABSTRACT

A field emission-type electron source has a plurality of electron source elements (10a) formed on the side of one surface (front surface) of an insulative substrate (11) composed of a glass substrate. Each of electron source elements (10a) includes a lower electrode (12), a buffer layer (14) composed of an amorphous silicon layer formed on the lower electrode (12), a polycrystalline silicon layer (3) formed on the buffer layer (14), a strong-field drift layer (6) formed on the polycrystalline silicon layer (3), and a surface electrode (7) formed on the strong-field drift layer (6). The field emission-type electron source can achieved reduced in-plane variation in electron emission characteristics.